

THE University of Vermont CANCER CENTER

INNOVATIONS

RESEARCH / EDUCATION / COMMUNITY OUTREACH / CLINICAL CARE

FALL 2025



THE ACADEMIC DIFFERENCE

Where discovery
drives care

DIRECTOR'S MESSAGE

Dear UVM Cancer Center community,

Expertise, Quality, Impact, Cutting-Edge Care. These are the hallmarks of an *academic* cancer center—and they define our work at the University of Vermont Cancer Center (UVMCC). We strive to understand the basic etiologies of the cancers affecting our communities in Vermont and northern New York, and we leverage this information to optimize cancer prevention, screening, and treatment. Informed by disease-specific expertise that is unrivaled across our region, our scientists and clinicians are making new discoveries that reshape fundamental paradigms, clinical practice and cancer policy.

In this issue of *Innovations*, you will read about ground-breaking deintensification clinical trials led by Cancer Center members. These studies aim to reduce toxicity of treatment while maintaining efficacy; simplify cancer care and delivery, particularly for our rural residents; and prevent long-term complications of cancer treatment. Novel approaches such as deintensification clinical trials are not available outside of an academic center.

This issue also showcases other practices that set our cancer center apart. You'll read how our research directly addresses the cancers that are most prevalent in our region; how we invest in the career development of the next generation of cancer scientists; and how we connect with communities in Vermont and northern New York to promote cancer prevention and screening. You'll also meet a caregiver whose personal experience inspired a project that supports glioblastoma research and care.

The UVM Cancer Center stands at the intersection of the University of Vermont, the Larner College of Medicine, and UVM Health. As a unified hub for cancer research, education, community outreach, and clinical care, we harness the strengths of each institution. It's through these synergies that UVM Cancer Center delivers the academic difference, bringing innovation, expertise, and impact to the communities we serve.



Randall F. Holcombe

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ON THE COVER:
**ROHIT SINGH, M.D., VISITS
WITH A PATIENT**

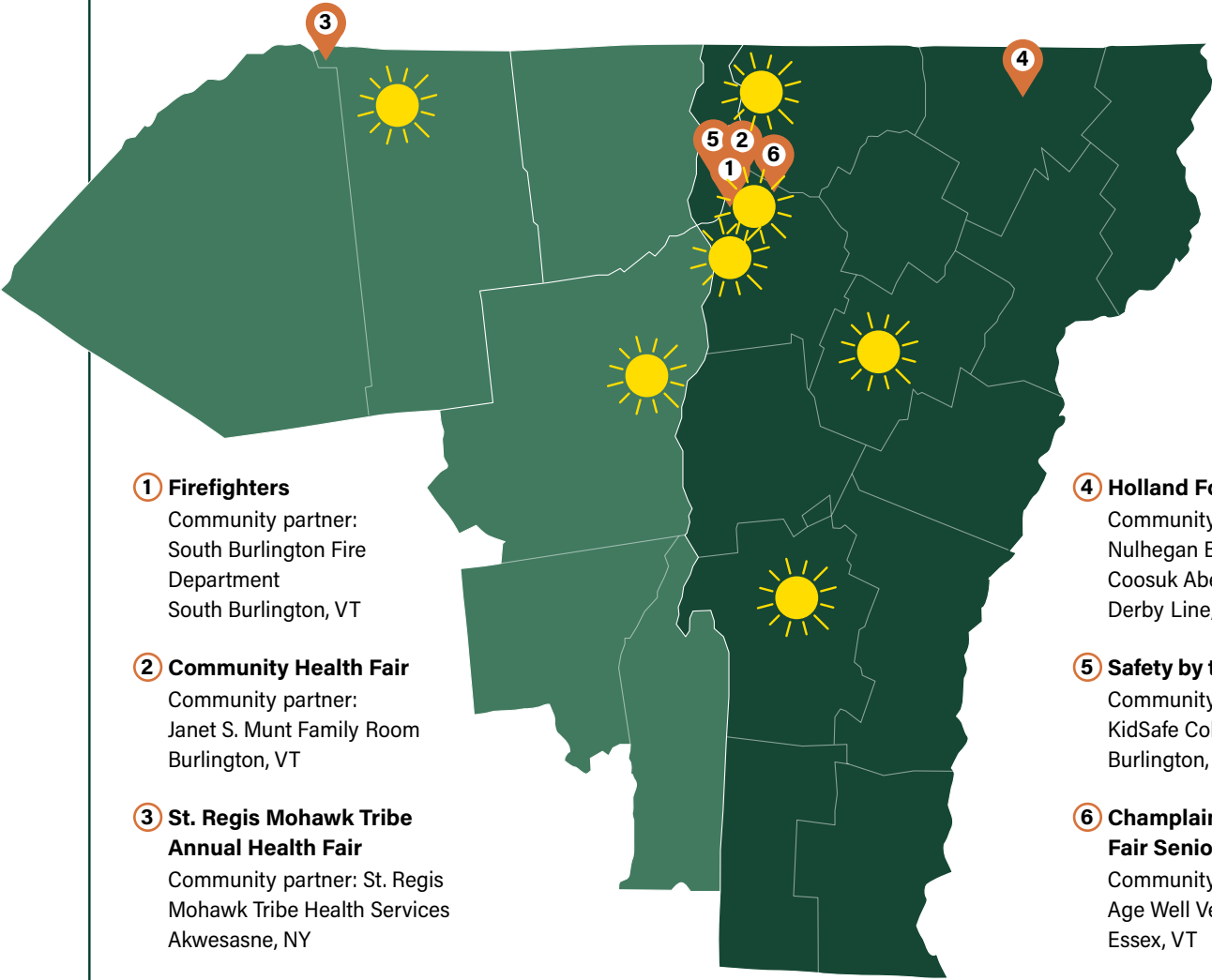
SKIN CHECKS AND SUN SAFETY, TO-GO

Vermont has the third-highest incidence rate of melanoma in the U.S. UVMCC's philanthropy-supported Outreach and Education Van, in partnership with UVM Health Dermatology, makes skin cancer screening and sun safety accessible for people across our catchment area. Here's where we've been in 2025.

2025 SUN SAFETY EVENTS

 Sun Safety events + skin checks

 Sun Safety events



- 1

Firefighters
 Community partner:
 South Burlington Fire
 Department
 South Burlington, VT
- 2

Community Health Fair
 Community partner:
 Janet S. Munt Family Room
 Burlington, VT
- 3

**St. Regis Mohawk Tribe
Annual Health Fair**
 Community partner: St. Regis
 Mohawk Tribe Health Services
 Akwesasne, NY

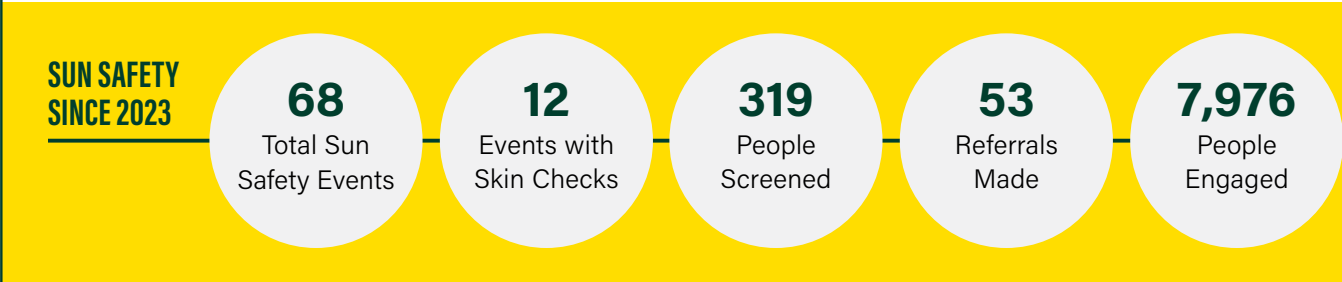
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Holland Food Shelf
 Community partner:
 Nulhegan Band of the
 Coosuk Abenaki Nation
 Derby Line, VT
- 5

Safety by the Lakeside
 Community partner:
 KidSafe Collaborative
 Burlington, VT
- 6

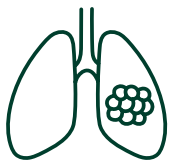
**Champlain Valley
Fair Senior Day**
 Community partner:
 Age Well Vermont
 Essex, VT

“THE AVAILABILITY OF DOCTORS IS SO SCARCE THAT HAVING SOMEONE CHECK ALLEVIATES SOME OF THE STRESS AND ANXIETY BY HAVING AN ANSWER.” — KARON THIBAUT, TOWN LIBRARIAN, HOLLAND, VT



EVIDENCE-BASED, PEOPLE-FOCUSED RESEARCH

At UVMCC, research is deeply connected to the lives of Vermonters and northern New Yorkers. Here are four innovative research projects, each designed to make a meaningful impact across our catchment area.



Sniffing Out Cancer— With Probiotics

Lung cancer is Vermont's most common cancer—but screening rates are only average, leaving many high-risk residents undiagnosed. Biomedical engineer **Michael Brasino**, Ph.D., is working to change that by addressing one factor that might hold people back: convenience.

Brasino is working on a home-based alternative to the traditional low-dose CT scan, which is only available at select locations. His solution: a two-part test using genetically modified probiotic bacteria—safe strains already found in food. Inhaled through a nebulizer, the bacteria enter the lungs and detect early cancer biomarkers. If they sense trouble, they release a synthetic protein that travels through the bloodstream and exits in urine. "That signal can be picked up with a simple at-home test—just like a pregnancy test," Brasino explains.

Brasino will collect feedback from patients and providers to ensure that this at-home approach to lung cancer screening is easy to use and follow up on.

His team has already proven the concept in mice with proxy tumors. Early results suggest this method could be even more sensitive than current scans. Next up: testing it in more realistic, genetically-engineered models. Once the test has entered the trial phase, Brasino will collect feedback from patients and providers to ensure that this at-home approach to lung cancer screening is easy to use and follow up on.

"If it's not convenient, people might not do it," Brasino says. "But if it is, we can catch cancer earlier—and save lives."



HART Over Harm: A New Kind of Palliative Radiation

Nearly half of cancer patients receiving radiation at UVMCC aren't being treated to cure their disease. They're receiving *palliative radiation*, aimed at easing symptoms like pain, bleeding, and discomfort. But across much of the U.S., this treatment relies on a decades-old technique known as APPA, which emits radiation across larger fields. It works—but often at the cost of damaging nearby healthy organs.

Natanial Lester-Coll, M.D., and his colleagues at UVMCC hope to shift that paradigm with a hybrid approach that sidesteps toxicity in palliative radiation. Called the Hybrid Palliative Radiation Therapy or HART technique, and developed at UVMCC, it works by emitting small doses of radiation in an arc. The beam still targets the tumor, but its movement spreads out the dose, reducing collateral damage to surrounding tissue.

After noticing fewer side effects in patients treated with the HART method, Lester-Coll launched a single-arm trial to formally compare patient-reported side effects against historical data. "Palliative radiation is an understudied space," he says. "We need innovation here to move the needle." By lowering the frequency of side effects, the new

The beam still targets the tumor, but its movement spreads out the dose, reducing collateral damage to surrounding tissue.

technique could significantly improve patients' quality of life and lessen their treatment burden. This is important for UVMCC's rural patients, many of whom have limited access to follow-up care. "We're trying to make treatment safer and less burdensome," Lester-Coll says. "Because even when curing the cancer isn't the goal, comfort and dignity still are."



The UV Puzzle: Vermont's Skin Cancer Mystery

Vermont consistently ranks among states with the highest rates of melanoma in the country. The usual suspects—fair-skinned populations, outdoor-driven lifestyles, and higher elevations—might help explain it. But as with most scientific puzzles, the full story is likely more complex.

Molecular biologist **Steven Roberts**, Ph.D., is on a mission to uncover what's really driving Vermont's high skin cancer rates—particularly melanoma, the deadliest form. "Sun exposure is a known cause of skin cancer, mainly because ultraviolet (UV) light can damage DNA and trigger mutations," he explains. "Around 70% of melanomas carry a specific mutation that drives tumor

The idea is to see if any common mutational patterns emerge, which may indicate a uniqueness to local UV light.

growth and has unique features, suggesting it's caused by a rare type of DNA damage from UV light. If we can measure how often mutations caused by this rare damage appear across the population, we might learn whether UV exposure in Vermont, or something about people who live here, makes them more prone to developing this skin cancer-linked mutation."

To bring this fundamental research to life, Roberts is teaming up with dermatologist and fellow Cancer Center member **Melanie Bui**, M.D., Ph.D. Together, they're launching a study that will analyze the DNA of UV-exposed skin from Vermont patients. They will examine the mutational signatures in those samples and compare them to yeast cells exposed to Vermont's natural sunlight. The goal is to see if any common mutational patterns emerge, which may indicate a uniqueness to local UV light.

Next, they'll compare those samples with others taken at partner research programs in Florida and Washington State—two regions with very different climates and UV profiles. If the mutational fingerprints differ, it could point to environmental or geographic factors that influence how skin cancer develops, and may even inform guidance around sun safety in Vermont. Says Roberts, "The question I always ask myself—and one I encourage my students to ask—is: What are we going to learn, and how is it going to help people?"



Beyond Screens: Rethinking Connection in Telehealth

Telehealth has emerged as a promising alternative for rural Vermonters, offering a way to connect with providers without

the burden of long drives, parking hassles, or waiting rooms. But what's gained in convenience may come at the cost of intimacy. Does virtual care affect how patients feel about their relationships with their providers?

That's the question **Elise Tarbi**, Ph.D., APRN, set out to answer. From June 2024 to March 2025, Tarbi spoke with cancer patients living in rural areas about their telehealth experiences. She wanted to know: Did virtual visits change how they connected with their providers? Did it impact their overall experience of care, and if so, how?

What she found surprised her. While the time-saving aspect of telehealth was a perk, it wasn't the only benefit. Patients described how eliminating travel and stints in waiting rooms gave them time to breathe, reflect, and ask questions. "It gave them the space to slow down," Tarbi

Patients described how eliminating travel and stints in waiting rooms gave them time to breathe, reflect, and ask questions.

says. "The accessibility and convenience of telehealth may help people feel more connected to their providers, especially those living with cancer who maybe can't get out of bed that day."

But the real key to connection wasn't the technology—it was the provider themselves. "People said they felt connected when their provider really saw them as a person," Tarbi explains. "I went into the study looking for specific communication tactics like eye contact, body language, and camera setup. These practices are important, but what mattered more was when providers took time to get to know patients beyond their diagnosis." ■

LESS CAN BE MORE: DEINTENSIFYING CANCER CARE IN VERMONT

Most cancer clinical trials aim to improve outcomes by adding new therapies to the standard of care. Deintensification clinical trials flip that model, asking whether less treatment could be just as effective as the standard of care, while offering better quality of life with fewer side effects.

Researchers at UVMCC are exploring ways to safely reduce the dose, shorten the duration, or even eliminate phases of treatment for select patients. Especially for those in Vermont's rural areas, fewer trips for care and less toxicity result in meaningful quality of life improvements. "It's about tailoring care to the patient and avoiding unnecessary treatments," says **Tracy Smith**, M.Sc., Ph.D., UVMCC's protocol writer for investigator-initiated cancer clinical trials. "Less time in treatment, lower costs, and fewer side effects—that's a win for everyone." Here are two trials that demonstrate those benefits.

MOHSAHRTSS study (UVMCC-funded)

Catchment area relevance: Vermont has one of the highest incidence rates of melanoma in the United States.

UVMCC PI: Chris Anker, M.D.

What it is: Radiation therapy is a standard treatment for Cutaneous Squamous Cell Carcinoma (cSCC)—but is it always necessary? Radiation oncologist **Chris Anker**, M.D., is exploring that question in a clinical trial offering tailored alternatives. "Patients deserve more pragmatic options," says Anker. "Based on research looking at past patients, we've identified a moderate-risk group of patients who are typically encouraged to pursue radiation therapy but who did well without it, so now we're building on that data. These moderate-risk patients, most of whom are in their 70s and 80s, can opt for structured surveillance through the trial—routine physical exams and ultrasounds to monitor for recurrence—in place of radiation."

Additionally, the MOHSAHRTSS study (MOHs Surgery and Adjuvant Hypofractionated short-course Radiation Therapy and Structured Surveillance for cutaneous head and neck cSCC) offers patients with high-risk cSCC a short-course radiation protocol: just five treatments, instead of the typical 20 to 30.

Early results are promising. One patient expressed relief at avoiding unnecessary hospital visits and radiation side-effects—both of which can be challenging for elderly patients. "Independence matters to our patients—especially in rural areas, where support might be limited," Anker says. "Treatment should reflect the patient's needs—not just the disease."

14 DEINTENSIFICATION TRIALS
OPEN AT UVMCC

99 PATIENTS ENROLLED

10 DIFFERENT TYPES OF
CANCER TARGETED

4 INVESTIGATOR-INITIATED
TRIALS FROM UVM CANCER
CENTER RESEARCHERS

DEBRA Trial (nationally-funded)

Catchment area relevance: Among Vermont women, breast cancer is the most commonly diagnosed cancer and the second leading cause of cancer death in the state, after lung cancer.

UVMCC PI: Puyao Li, M.D.

What it is: Breast cancer treatment has evolved dramatically over the past four decades—thanks in part to tools like the Oncotype score, a genetic test that predicts the likelihood of recurrence or spread. These scores are guiding the national NRG DEBRA clinical trial (DE-escalation of Breast Radiation in Adjuvant therapy), which explores whether women ages 50 to 69 with low Oncotype scores can safely skip radiation therapy after surgery.

Participants in this randomized controlled trial—about a dozen of whom are enrolled at UVMCC—have undergone lumpectomies and are receiving standard endocrine therapy. The study aims to determine whether radiation is always necessary for this subset of breast cancer patients—and if not, to make omission a standard option for women in this age group.

"There's evidence that patients—especially those with breast cancer—feel more satisfied when they're empowered to choose a treatment that aligns with their values," says **Puyao Li**, M.D. "If my patient leaves feeling informed and confident in their decision, I know I've done my job." ■



INSPIRE. TRAIN. MENTOR.

The need for cancer scientists and clinicians is ever-increasing. But what does it really take to build a career in cancer care and research? UVMCC's Cancer Research Training and Education Coordination (CRTEC) team explores that question every day by training and mentoring trainees as they navigate the field and develop their skills. One's path is rarely linear, and often deeply personal. Here, we share the stories of two individuals who've taken different journeys through the program—and where those journeys have led.



GRETA JOOS

Greta Joos: Third-year medical student, UVM Larner College of Medicine, UVMCC trainee member

UVMCC Mentor: Jessica Heath, M.D.

Area of focus: Pediatric oncology, with a focus on patient access to non-FDA approved cancer therapies

Extracurricular: Promoting health literacy and health care accessibility for unhoused community members (Schweitzer Fellowship awardee)

- **7/2019** Shadowed and volunteered at UVMCC; met Dr. Heath
- **5/2021** Graduated with Distinction in Biology from Duke University
- **5/2021–8/2023** Clinical Research Coordinator in pediatric inherited bone marrow failure at Boston Children's Hospital/Dana Farber Cancer Institute
- **8/2023** Joined Dr. Heath's lab to conduct clinical research
- **3/2024** Awarded Larner's Schweitzer Fellowship to organize foot care clinics in shelters for the unhoused
- **6/2024** Awarded UVMCC Juckett Summer Research Fellowship
- **8/2024** First author publication in *Journal of Pediatric Hematology/Oncology*, PMID: 38934594
- **9/2024** Presented at UVMCC Summer Research Poster Session
- **3/2025** Presented at UVMCC Scientific Retreat
- **4/2025** Panelist for UVMCC Careers in Cancer
- **5/2025** Awarded the Jerold and Ingela Lucey Early Career Investigator Prize for Innovations in Infant or Child Health (aka "the Lucey Prize")
- **5/2025** Presented clinical research at ASPHO conference
- **Future** Pursuing a career which merges her passions for clinical care, research, and advocacy



PETRA KAPSALIS

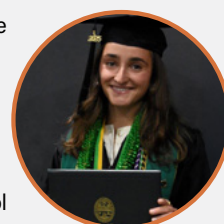
Petra Kapsalis: UVM Class of 2025, UVMCC trainee member

UVMCC Mentor: Jason Stumpff, Ph.D.

Area of focus: Development of cancer therapeutic resistance

Extracurricular: Led the UVM Women's Club Lacrosse team to two national championships

- **1/2023** Joined the Stumpff Lab to conduct research
- **5/2023** Organized a Morgan's Message Lacrosse game dedicated to athletes' mental health
- **6/2023** Awarded UVMCC Summer Research Fellowship
- **10/2023** Presented at UVMCC Summer Research Poster Session
- **3/2024** Awarded Nicole J. Ferland Summer Grant to continue cancer-related research in the Stumpff Lab
- **4/2024** Elected Women in STEM Community Outreach Director
- **5/2024** WCLA DII National Champions for UVM Women's Club Lacrosse
- **8/2024** Elected UVM Women's Club Lacrosse President
- **11/2024** Organized Women in STEM Hope Lodge dinner
- **4/2025** Distinguished Undergraduate Research defense
- **5/2025** Second UVM Women's Club Lacrosse National Championship
- **5/2025** Awarded Warren R. Steinberg Outstanding Senior in Microbiology Award
- **5/2025** Graduated Magna Cum Laude with a major in Microbiology and minor in Health Sciences
- **Current** Working as a Clinical Care Associate at UVMCC
- **Future** Plans to attend medical school



MARLENE'S CARDINALS: A LEGACY OF LOVE AND HOPE

Below: Norton Latourelle (center) and his one-of-a-kind cardinals support cancer patients and research.

After losing his wife Marlene to glioblastoma, Vermont folk artist **Norton Latourelle** found healing in the familiar rhythm of carving wooden cardinals—symbols of love, memory, and presence. What began as a personal tribute has become “Marlene’s Cardinals,” a project supporting glioblastoma cancer patients, caregivers, and research at the UVM Cancer Center. Each hand-carved cardinal is sold for \$100, with every dollar donated going to help families facing the financial and emotional toll of cancer.



To donate and receive a cardinal, scan the QR code or visit go.uvm.edu/cardinal